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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/737,606	06/13/99	LARSSON B	705/[illegible]

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M171/1029

EXAMINER	
PEREZ,G	
ART UNIT	**PAPER NUMBER**
2834	20

DATE MAILED: 10/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/297,606	06/18/99	LARSSON	B 705/1862-2/9

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EXAMINER	
PEREZ,G	
ART UNIT	PAPER NUMBER
2834	9

DATE MAILED: 09/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/297,606	LARSSON ET AL.	
	Examiner	Art Unit	
	Guillermo Perez	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20,22-35,37-56 and 58-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,22-35,37-56 and 58-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *17* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Prosecution Application

The request filed on August 3, 2001 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/297,606 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 34-35, 37, 40-41 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. (U.S. Pat. No. 5,583,387) in view of Nikitin et al. (U. S. Pat. No. 4, 429, 244).

Referring to claim 34, Takeuchi et al. disclose a method for manufacturing a stator for a high voltage rotating electric machine having a stator, with a stator core, a winding (16) and a rotor, wherein the stator core has stator teeth (11) extending radially inwards, towards the rotor comprising the steps of:

axially joining a number of tooth sections (11) into a stator tooth plank for forming the stator tooth fitting, side by side, a number of stator tooth planks, for forming at least one section of the stator core, and providing a winding (16) within which a generated electric field confining the electric field in the winding (16) for at least one turn of the winding (column 3, lines 10 to 35).

Referring to claim 35, Takeuchi et al. disclose that joining together a number of sections (11) of the stator core to form a complete stator core (column 3, lines 46 to 52).

Referring to claim 37, Takeuchi et al. disclose the steps of removably locating an initial fixture element, including at least one of a stator tooth plank and a fixture tooth in a manufacturing fixture;

removably inserting at least one temporary stator tooth (11) in the fixture;

inserting a stator winding on the temporary stator tooth situated closest to the fixture element;

removing the temporary stator tooth situated closest to the fixture element from the manufacturing fixture, and allowing the stator winding placed on the temporary stator tooth to fall or be pressed down into a correct position in a first winding slot in the fixture element;

providing a stator winding and inserting the stator tooth into the manufacturing fixture and fitting the stator tooth over the stator winding;

repeating the previous steps until at least a section of a complete stator core has been produced (column 3, lines 46 to 52).

Referring to claim 40, Takeuchi et al. disclose the rotation of the fixture about a horizontal axis corresponding to an axis of symmetry of the stator (column 3, lines 46 to 52).

Referring to claim 41, Takeuchi et al. disclose joining the stator windings to define an intended number of poles and phases (column 3, lines 26 to 29).

Referring to claim 56, Takeuchi et al. disclose a stator for a rotating electric machine, manufactured in accordance with the method in claim 34 (column 3, lines 10 to 35). However, Takeuchi et al. do not disclose the provision of a magnetically permeable high voltage electric field confining cable.

Nikitin et al. disclose the provision of a magnetically permeable high voltage electric field confining cable (column 3, lines 34-36). The invention of Nikitin et al. has the purpose of raising the voltage across the stator winding.

It would have been obvious at the time the invention was made to modify the stator of Takeuchi et al. and provide it with the cable disclosed by Nikitin et al. for the purpose of raising the voltage across the stator winding.

2. Claims 1 to 2, 13 to 14, 17 to 20, 22 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. (U.S. Pat. No. 5,382,859) in view of Nikitin et al. (U. S. Pat. No. 4, 429, 244) and further in view of Elton et al. (U. S. Pat. No. 5, 036, 165).

Huang et al. disclose a stator for a rotating electric machine, comprising a stator core (figure 5) and a winding (92), the stator core (figure 5) including stator teeth (32) extending radially inwards (figure 2), towards the rotor configured as a number of tooth sections (32) jointed axially (figure 3) forming a stator tooth plank (figure 3), a number of the stator tooth planks (42) being fit together side by side forming a section (40) of a stator core up to a complete stator core (figure 5), such that when an electric field is generated the field is enclosed within the winding (92) for at least one turn thereof. Huang et al. disclose that a number of the sections (40) are joined together in order to

form a complete stator core (figure 5). Huang et al. disclose that the stator winding (92) is inserted between each stator tooth plank before the planks are fit together (abstract).

Huang et al. disclose that the stator tooth (32) comprises a forward tooth portion (32a) facing inwards, towards the rotor (figure 2), when mounted in the stator (figure 1), and a yoke portion (36) facing outwards, each stator tooth (32) opposite lateral sides each confronting a corresponding side of an adjacent stator tooth (figure 1), the confronting lateral sides together forming a slot (26) for receiving the winding (92). Huang et al. disclose a lining (column 8, lines 19 to 24) disposed on at least one of the lateral sides, the lining being formed of a resilient material. Huang et al. disclose compressing means (figure 5) for tangentially compressing the teeth (32) for providing a pre-stressing at the innermost end of the teeth.

Huang et al. disclose that the compressing means (56) includes a stator frame (50) and an annular stator frame (50) surrounding the core for securing the stator core sections (40) of the complete stator core in place. Huang et al. disclose that the tooth (32) has an outer yoke portion, and further including a stator frame, and a lining of a resilient material located on the external side of the yoke portion of the tooth (32), in contact with the stator frame (column 8, lines 27 to 34). Huang et al. disclose that the stator frame has at least one longitudinal axial opening (figure 5) and the stator frame includes at least one tightening means (56) for tightening the frame around the stator core by reducing the opening.

Huang et al. disclose that each tooth section (40) includes guiding means (33,35) on both lateral sides (figures 7 and 8). Huang et al. disclose that the guiding means

(33,35) for engaging in mating relation with corresponding guiding means (33,35) on the adjacent stator tooth (32). However, Huang et al. do not disclose that the stator is for a high voltage electric machine. Huang et al. do not disclose that the winding comprises a cable including a circuit-carrying conductor and a magnetically permeable, electric field confining insulating covering surrounding the conductor.

Nikitin et al. disclose a high voltage stator with windings comprising a high voltage cable (5,6) including a circuit-carrying conductor for the purpose of raising the voltage across the stator winding.

Elton et al. disclose a cable (figure 1) including a circuit-carrying conductor (102) and a magnetically permeable, electric field confining insulating covering (106) surrounding the conductor (102). The invention of Elton et al. has the purpose of avoiding the development of a corona discharge when an electrical potential exists between the conductor and the region adjacent the exterior surface of the insulator.

It would have been obvious at the time the invention was made to modify the stator for a rotating electric machine of Huang et al. and provide it with the high voltage cable configuration disclosed by Nikitin et al. and Elton et al. for the purpose of raising the voltage across the stator winding and avoiding the development of a corona discharge when an electrical potential exists between the conductor and the region adjacent the exterior surface of the insulator.

3. Claims 3-4, 6-8, 12 and 58 to 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Nikitin et al. and further of

Elton et al. as applied to claims 1 and 34 above, and further in view of G. F. Redfern (GB468,827).

Huang et al., Nikitin et al. and Elton et al. disclose a stator as described on item 2 above. Elton et al. also disclose that the winding (100) comprises at least one current-carrying conductor (102),

a first layer having semi-conducting properties surrounding the conductor (104),

a solid insulating layer surrounding the first layer (106), and

a second layer having semi-conducting properties surrounding the insulating layer (110). Elton et al. also disclose that at least one of the first layer (104) and the second layer (110) forms an equipotential surface surrounding the conductor (column 2, lines 27 to 32). Elton et al. also disclose that the second layer (110) is connectable to a predetermined potential (column 2, lines 41 to 43). Elton et al. also disclose that the predetermined potential is ground potential (figure 1). Elton et al. also disclose that each of the three layers is solidly connected to the adjacent layer along substantially the whole of a connecting surface therebetween.

However, neither Huang et al., Nikitin et al. nor Elton et al. disclose that the stator teeth have radially positioned semicircular recesses and the teeth are disposed with the recesses in confronting relationship forming circular axial openings for threadably receiving the cable therein. Neither Huang et al., Nikitin et al. nor Elton et al. disclose that the cable is threadably inserted into the aligned circular openings between each stator tooth plank before the planks are fit together. Neither Huang et al., Nikitin et al. nor Elton et al. disclose that the recesses comprise semicircular surfaces formed in the

teeth, and the axial openings are in the form of circular holes for threadably receiving the cable therein. Neither Huang et al., Nikitin et al. nor Elton et al. disclose that the second layer is outermost of the cable for contacting the stator core. Neither Huang et al., Nikitin et al. nor Elton et al. disclose the step of forming the radially adjacent recesses comprising forming semicircular recesses and fitting the two planks together forms radially adjacent circular openings for threadably receiving the cable therein.

G. F. Redfern discloses that the stator teeth have radially positioned semicircular recesses and the teeth are disposed with the recesses in confronting relationship forming circular axial openings for threadably receiving the conductor (a) therein. G. F. Redfern discloses that the conductor (a) is threadably inserted into the aligned circular openings between each stator tooth plank. G. F. Redfern discloses that the recesses comprise semicircular surfaces formed in the teeth, and the axial openings are in the form of circular holes for threadably receiving the conductor therein. G. F. Redfern discloses that the second layer is outermost of the conductor for contacting the stator core. G. F. Redfern discloses the step of forming the radially adjacent recesses comprising forming semicircular recesses and fitting the two planks together forms radially adjacent circular openings for threadably receiving the conductor therein. G. F. Redfern's invention has the purpose of giving the machine a suitable leakage value.

It would have been obvious at the time the invention was made to modify the stator of Huang et al., Nikitin et al. and Elton et al. and provide it with the stator teeth configuration disclosed by G. F. Redfern for the purpose of giving the machine a suitable leakage value.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Nikitin et al. and further in view of Elton et al. as applied to claim 1 above, and further in view of Bals (GB 2,210,216 A).

Huang et al., Nikitin et al. and Elton et al. disclose a stator as described on item 2 above. However, neither Huang et al., Nikitin et al. nor Elton et al. disclose that the stator winding comprises a flexible cable.

Bals discloses that the stator winding comprises a flexible cable (23). Bals' invention has the purpose of generating a high voltage in the embodiment.

It would have been obvious at the time the invention was made to modify the stator of Huang et al., Nikitin et al. and Elton et al. and provide it with the flexible cable disclosed by Bals for the purpose of generating a high voltage in the embodiment.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Nikitin et al. and further in view of Elton et al. as applied to claim 1 above, and further in view of Penczynski et al. (U. S. Pat. 3,959,549).

Huang et al., Nikitin et al. and Elton et al. disclose a stator as described on item 2 above. However, neither Huang et al., Nikitin et al. nor Elton et al. disclose that at least two adjacent layers have substantially equal thermal expansion coefficients.

Penczynski et al. discloses disclose that at least two adjacent layers (6,20) have substantially equal thermal expansion coefficients (column 4, lines 37-40) for the purpose of improving the mechanical elasticity of the insulation.

It would have been obvious at the time the invention was made to modify the stator of Huang et al., Nikitin et al. and Elton et al. and provide it with the layer materials disclosed by Penczynski et al. for the purpose of improving the mechanical elasticity of the insulation.

6. Claims 10 to 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Nikitin et al. and further of Elton et al. in view of G. F. Redfern as applied to claim 3 above, and further in view of Breitenbach et al. (U.S. Pat. No. 4,785,138).

Huang et al., Nikitin et al., Elton et al. and G. F. Redfern disclose a stator as described on item 3 above. However, neither Huang et al., Nikitin et al., Elton et al. nor G. F. Redfern disclose that each of the three layers is solidly connected to the adjacent layer along substantially the whole of a connecting surface therebetween. Neither Huang et al., Nikitin et al., Elton et al. nor G. F. Redfern disclose that the layers adhere to one another where the cable is subjected to a bending force.

Breitenbach et al. disclose that each of the three layers is solidly connected to the adjacent layer along substantially the whole of a connecting surface therebetween (column 4, lines 24 to 28). Breitenbach et al. disclose that the layers adhere to one another where the cable is subjected to a bending force. The invention of Breitenbach et al. has the purpose of minimizing thermal aging and avoiding detaching of the layer from the conductor due to bending or axial stress.

It would have been obvious at the time the invention was made to modify the stator of Huang et al., Nikitin et al., Elton et al. and G. F. Redfern and provide it with the

layers configuration disclosed by Breitenbach et al. for the purpose of avoiding the layers from being separated from the conductor and thermal aging thus improving reliability on the cable.

7. Claims 15 to 16 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Nikitin et al. and further in view of Elton et al. as applied to claims 1 and 13 above, and further in view of Rieber et al. (U.S. Pat. No. 4,607,183).

Huang et al., Nikitin et al. and Elton et al. disclose a stator as described on item 1 above. However, neither Huang et al., Nikitin et al. nor Elton et al. disclose that each stator tooth has at least one longitudinal axial notch along its innermost side facing the rotor. Neither Huang et al., Nikitin et al. nor Elton et al. disclose a key element of a non magnetic material is positioned in the notch to prevent lateral oscillations of the tooth. Neither Huang et al., Nikitin et al. nor Elton et al. disclose a lining located in the notch formed of rubber.

Rieber et al. disclose that each stator tooth has at least one longitudinal axial notch (30) along its innermost side facing the rotor, and a key element (36) of a non magnetic material is positioned in the notch (30) to prevent lateral oscillations of the tooth. Rieber et al. disclose a lining (48) located in the notch (30) formed of rubber (column 1, lines 65 to 68). The invention of Rieber et al. has the purpose of providing a measure of resilience and lubricity to the surface thereby reducing the removal of the insulation during wedge drive operation and eliminate long term abrasive wear of laminations of the dynamo-electric machine.

It would have been obvious at the time the invention was made to modify the stator of Huang et al., Nikitin et al. and Elton et al. and provide it with the notch, key element and lining disclosed by Rieber et al. for the purpose of providing a measure of resilience and lubricity to the surface thereby reducing the removal of the insulation during wedge drive operation and eliminate long term abrasive wear of laminations of the dynamo-electric machine.

8. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Nikitin et al. and further in view of Elton et al. as applied to claim 17, and further in view of B. C. Evans (U.S. Pat. No. 2,424,443).

Huang et al., Nikitin et al. and Elton et al. disclose a stator as described on item 2 above and also friction means located at the contact surface between the tooth yoke and the stator frame (column 8, lines 27 to 34). However, neither Huang et al., Nikitin et al. nor Elton et al. disclose that the compressing means includes a structure of pre-stressing means, arranged along the circumference of the core, including brackets arranged axially for distributing the compressive force to the core; nor that the compressing means includes rods or wires.

B. C. Evans discloses that the compressing means includes a structure of pre-stressing means (figure 3), arranged along the circumference of the core (1), including brackets (8) arranged axially for distributing the compressive force to the core (1). B. C. Evans discloses that the compressing means includes rods or wires (4). B. C. Evans' invention has the purpose of retaining the core in assembled relationship.

It would have been obvious at the time the invention was made to modify the stator of Huang et al., Nikitin et al. and Elton et al. and provide it with the compressing means disclosed by B. C. Evans for the purpose of maintaining structure integrity of the stator core during operation.

9. Claims 23 to 24 and 30 to 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Nikitin et al. further in view of Elton et al. and further in view of B. C. Evans as applied to claims 17, 20 and 27, and further in view of O. Lasche (U.S. Pat. No. 681,800).

Huang et al., Nikitin et al., Elton et al. and B. C. Evans disclose a stator as described on item 7 above. However, neither Huang et al., Nikitin et al., Elton et al. nor B. C. Evans disclose that the stator frame is divided into at least two frame sections, such that a longitudinal axial opening is formed between the frame sections, and further including means for connecting the frame sections and for tightening the frame around the stator core for reducing the openings. Neither Huang et al., Nikitin et al., Elton et al. nor B. C. Evans disclose that the means for tightening the stator frame includes a bolted joint operating against the resilient material of the linings. Neither Huang et al., Nikitin et al., Elton et al. nor B. C. Evans disclose that the compressing means includes at least one clamping ring applied circumferentially around the stator core. Neither Huang et al., Nikitin et al., Elton et al. nor B. C. Evans disclose a base upon which the core is supported.

O. Lasche discloses that the stator frame is divided into at least two frame sections (figure 4), such that a longitudinal axial opening is formed between the frame

sections, and further including means for connecting the frame sections and for tightening the frame around the stator core for reducing the openings. O. Lasche discloses that the means for tightening the stator frame includes a bolted joint (n). O. Lasche discloses that the compressing means includes at least one clamping ring (alpha) applied circumferentially around the stator core. O. Lasche discloses a base upon which the core is supported. O. Lasche's invention has the purpose of obviating the inward and outward bending of the rings or segments.

It would have been obvious at the time the invention was made to modify the stator of Huang et al., Nikitin et al., Elton et al. and B. C. Evans and provide it with the stator frame, the connecting, tightening and compressing means, and the base disclosed by O. Lasche for the purpose of improving structural rigidity on the stator core.

10. Claims 25 to 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. in view of Nikitin et al. further in view of Elton et al. and further in view of B. C. Evans and further in view of O. Lasche as applied to claim 24 and further in view of Beck et al. (U.S. Pat. No. 4,255,849).

Huang et al., Nikitin et al., Elton et al., B. C. Evans and O. Lasche disclose a stator a described on item 7 above. However, neither Huang et al., Nikitin et al., Elton et al., B. C. Evans nor O. Lasche disclose that the stator frame further includes a spring means associated with the tightening means, such that the openings in the stator frame and the winding slots are automatically adjusted to thermal expansions and contractions

of the winding. Neither Huang et al., Nikitin et al., Elton et al., B. C. Evans nor O. Lasche disclose that the spring means includes a cup spring.

Beck et al. disclose that the stator frame further includes a spring means associated with the tightening means, such that the openings in the stator frame and the winding slots are automatically adjusted to thermal expansions and contractions of the winding. Beck et al. disclose that the spring means includes a cup spring (column 2, lines 9 to 24). The invention of Beck et al. has the purpose of preventing movements of the stator windings due to large current densities which exert large forces on the windings.

It would have been obvious at the time the invention was made to modify the stator of Huang et al., Nikitin et al., Elton et al., B. C. Evans and O. Lasche and provide it with the spring means disclosed by Beck et al. for the purpose of preventing movements of the stator windings due to large current densities which exert large forces on the windings.

11. Claims 38 to 39, 42 to 43, 47 to 51 and 54 to 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. in view of Nikitin et al. and further in view of Huang et al.

Takeuchi et al. and Nikitin et al. disclose a method for manufacturing a stator as described on item 2 above. However, neither Takeuchi et al. nor Nikitin et al. disclose a step of gluing a yoke portion of each stator tooth plank to a corresponding yoke portion of a previously fitted stator tooth plank at a corresponding yoke position after a section of a complete stator core has been manufactured. Neither Takeuchi et al. nor Nikitin et

al. disclose a step of providing a lining of resilient material to the yoke portion of at least one of two opposite lateral sides of a stator tooth facing the corresponding side of an adjacent stator. Neither Takeuchi et al. nor Nikitin et al. disclose providing a lining of a resilient material to the external side of the yoke portion of the stator tooth. Neither Takeuchi et al. nor Nikitin et al. disclose providing a lining of a resilient material to the inwardly facing surface of the stator frame, which enters into contact with the external sides of the yoke portions of the stator teeth.

Neither Takeuchi et al. nor Nikitin et al. disclose a step of assembling the stator core sections into a complete stator core within a stator frame. Neither Takeuchi et al. nor Nikitin et al. disclose surrounding the stator core with resilient material, and tightening the stator frame for compressing the resilient material so that the winding is pressed against the walls of the slots. Neither Takeuchi et al. nor Nikitin et al. disclose providing a friction means at the contact surface between the external side of the yoke portions of the teeth and the stator yoke portion arranged circumferentially along the external side of the yoke portions. Neither Takeuchi et al. nor Nikitin et al. disclose a step of inserting the winding in the axial direction of the stator core.

Huang et al. disclose a step of gluing a yoke portion of each stator tooth plank to a corresponding yoke portion of a previously fitted stator tooth plank at a corresponding yoke position after a section of a complete stator core has been manufactured. Huang et al. disclose a step of providing a lining of resilient material to the yoke portion of at least one of two opposite lateral sides of a stator tooth facing the corresponding side of an adjacent stator. Huang et al. disclose a step of providing a lining of a resilient

material to the external side of the yoke portion of the stator tooth. Huang et al. disclose a step of providing a lining of a resilient material to the inwardly facing surface of the stator frame, which enters into contact with the external sides of the yoke portions of the stator teeth. Huang et al. disclose a step of assembling the stator core sections into a complete stator core within a stator frame.

Huang et al. disclose surrounding the stator core with resilient material. Huang et al. disclose tightening the stator frame for compressing the resilient material so that the winding is pressed against the walls of the slots. Huang et al. disclose providing a friction means at the contact surface between the external side of the yoke portions of the teeth and the stator yoke portion arranged circumferentially along the external side of the yoke portions. Huang et al. disclose a step of inserting the winding in the axial direction of the stator core. Huang et al. disclose a step of manufacturing the stator on the site of installation of the rotating electric machine (column 8, lines 19 to 36). The invention of Huang et al. has the purpose of providing an improved design of a stator core formed of multiple segments formed of pressed double-coated iron powder which have a plurality of radially oriented teeth.

It would have been obvious at the time the invention was made to modify the method of manufacture a stator of Takeuchi et al. and provide it with the method steps disclosed by Huang et al. for the purpose of providing an improved design of a stator core formed of multiple segments formed of pressed double-coated iron powder which have a plurality of radially oriented teeth.

12. Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. in view of Nikitin et al. and further in view of Rieber et al.

Takeuchi et al. and Nikiting et al. disclose a method for manufacturing a stator as described on item 2 above. However, neither Takeuchi et al. nor Nikitin et al. disclose a step of forming notches at a forward end of the stator tooth planks and inserting key elements of a non magnetic material between the tooth planks in the notches. Neither Takeuchi et al. nor Nikitin et al. disclose a step of providing a lining of a resilient material inside the notch.

Rieber et al. disclose a step of forming notches at a forward end of the stator tooth planks and inserting key elements of a non magnetic material between the tooth planks in the notches. Rieber et al. disclose a step of providing a lining of a resilient material inside the notch (column 4, lines 51 to 53). The invention of Rieber et al. has the purpose of providing a measure of resilience and lubricity to the surface thereby reducing the removal of the insulation during wedge drive operation and eliminate long term abrasive wear of laminations of the dynamo-electric machine.

It would have been obvious at the time the invention was made to modify the method for manufacturing a stator of Takeuchi et al. and provide it with the steps disclosed by Rieber et al. for the purpose of providing a measure of resilience and lubricity to the surface thereby reducing the removal of the insulation during wedge drive operation and eliminate long term abrasive wear of laminations of the dynamo-electric machine.

13. Claims 46 and 52 to 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. in view of Nikitin et al. and further in view of O. Lashe.

Takeuchi et al. and Nikitin et al. disclose a method of manufacturing a stator as described on item 2 above. However, neither Takeuchi et al. nor Nikitin et al. disclose a step of applying compression means for tangentially compressing the teeth of the stator, thereby providing a pre-stressing at the innermost end of the teeth. Neither Takeuchi et al. nor Nikitin et al. disclose fitting the core sections together under compression by comprising pre-stressing the core about the circumference and distributing the compressive force to the core. Neither Takeuchi et al. nor Nikitin et al. disclose fitting the core sections together under compression by means of applying at least one clamping ring circumferentially around the core.

O. Lashe discloses a step of applying compression means for tangentially compressing the teeth of the stator, thereby providing a pre-stressing at the innermost end of the teeth. O. Lashe discloses fitting the core sections together under compression by comprising pre-stressing the core about the circumference and distributing the compressive force to the core. O. Lashe discloses fitting the core sections together under compression by means of applying at least one clamping ring circumferentially around the core (lines 75 to 80). O. Lashe's invention has the purpose of obviating the inward and outward bending of the rings or segments.

It would have been obvious at the time the invention was made to modify the method of manufacturing a stator of Takeuchi et al. and provide it with the steps

disclosed by O. Lashe for the purpose of obviating the inward and outward bending of the rings or segments.

14. Claims 60 to 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. in view of Nikitin et al. and further in view of Elton et al. in view of G. F. Redfern.

Takeuchi et al. disclose a method for manufacturing a stator as described on item 1 above. However, neither Takeuchi et al. nor Nikitin et al. disclose that the cable is threadably insertable into the aligned circular openings between each stator tooth plank before the planks are fit together. Neither Takeuchi et al. nor Nikitin et al. disclose that the recesses comprise semicircular surfaces formed in the teeth. Neither Takeuchi et al. nor Nikitin et al. disclose that the axial openings are in the form of circular holes for threadably receiving the cable therein. Neither Takeuchi et al. nor Nikitin et al. disclose the step of forming the radially adjacent recesses comprising forming semicircular recesses and fitting the two planks together forms radially adjacent circular openings for threadably receiving the cable therein.

Elton et al. disclose a cable including a circuit-carrying conductor and a magnetically permeable, electric field confining insulating covering surrounding the conductor for the purpose of avoiding the development of a corona discharge when an electrical potential exists between the conductor and the region adjacent the exterior surface of the insulator.

G. F. Redfern disclose that the cable is threadably insertable into the aligned circular openings between each stator tooth plank before the planks are fit together. G.

F. Redfern disclose that the recesses comprise semicircular surfaces formed in the teeth. G. F. Redfern disclose the axial openings are in the form of circular holes for threadably receiving the cable therein. G. F. Redfern disclose the step of forming the radially adjacent recesses comprising forming semicircular recesses and fitting the two planks together forms radially adjacent circular openings for threadably receiving the cable therein for the purpose of giving the machine a suitable leakage value.

It would have been obvious at the time the invention was made to modify the method for manufacturing a stator of Takeuchi et al. and Nikitin et al. and provide it with the cable, stator configuration and method steps disclosed by Elton et al. and G. F. Redfern for the purpose of raising the voltage across the stator winding, avoiding the development of a corona discharge when an electrical potential exists between the conductor and the region adjacent the exterior surface of the insulator and giving the machine a suitable leakage value.

Response to Arguments

Applicant's arguments with respect to claims 34-56, 60-62 have been considered but are moot in view of the new ground(s) of rejection.

In response to Applicants arguments that Nikitin does not disclose a high voltage stator comprising a high voltage stator it must be noted that Nikitin clearly states on column 3, lines 34-36 that "the high-voltage elements 6 of the winding 5 are single-layer or multilayer high-voltage cylindrical cables." Thus, Nikitin teaches the knowledge of using high voltage cables in the stator of a dynamoelectric machine. It is well known in the art to use high voltage cables in the stator of a dynamoelectric

machine. Elton shows an alternate high voltage cable configuration which as taught by Nikitin can be used in a high voltage electric machine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

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Guillermo Perez
September 7, 2001